



Chevron Resources Company

A division of Chevron Industries, Inc.

Manila Star Route, Vernal, UT 84078 • Phone (801) 789-7795

RECEIVED
MAY 05 1986

DIVISION OF
OIL, GAS & MINING

May 2, 1986

Act/047/007

Ms. Susan Linner
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

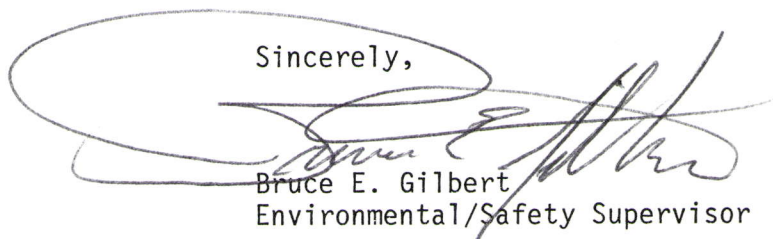
RE: Analysis of Borrow Material as Stipulation
for Bonding

Dear Susan:

Enclosed is a soils analysis of borrow material collected at our tailings dam site. Submittal of this analysis should complete all requirements included in Stipulation M-10(14)-JSL.

If you need further information, you can reach me at 789-7795.

Sincerely,



Bruce E. Gilbert
Environmental/Safety Supervisor

cc: Central File

BEG/vrs

SOIL TEST REPORT and FERTILIZER RECOMMENDATIONS

RECEIVED
MAY 05 1986

SOIL TESTING LABORATORY
Utah State University UMC 48
Logan, Utah 84322
(801) 750-2217

Name CHEVRON RESOURCES CO.
Street MANILA STAR ROUTE
City, State VERNAL, UTAH 84078
ZIP

DIVISION OF
OIL, GAS & MINING

Date 4-30-86

SAMPLE IDENT.	CROP TO BE GROWN	SOIL TEXTURE	LAB NO.
1) <u>TD-1</u>		<u>LOAM</u>	<u>428</u>
2) _____			
3) _____			
4) _____			

Copy sent to Extension office
in UINTAH County.

SOIL TEST RESULTS		Very Low	Low	Adequate/Normal	High	Very High	RECOMMENDATIONS	Notes
NITRATE-NITROGEN N ppm	1) _____	N recommendations are based on your crop and fert. history. A valid test for N requires special sampling procedures.					<u>90-110</u>	<u>a, b</u>
	2) _____						<u>N</u>	
	3) _____						<u>lbs/A</u>	
	4) _____							
PHOSPHORUS P ppm	1) <u>5.0</u>	*****					<u>70-90</u>	<u>c</u>
	2) _____						<u>P₂O₅*</u>	
	3) _____						<u>lbs/A</u>	
	4) _____							
POTASSIUM K ppm	1) <u>137</u>	*****					<u>0</u>	
	2) _____						<u>K₂O*</u>	
	3) _____						<u>lbs/A</u>	
	4) _____							
SALINITY EC _e mmhos/cm	1) <u>3.5</u>	*****						<u>d</u>
	2) _____							
	3) _____							
	4) _____							
pH	1) <u>7.9</u>	*****						<u>e</u>
	2) _____							
	3) _____							
	4) _____							
LIME	1) <u>++</u>	*****						
	2) _____							
	3) _____							
	4) _____							
	1) _____							
	2) _____							
	3) _____							
	4) _____							

NOTES: Payment is normally due before sample analysis unless you establish an account with us.

a. Reduce N to match degree of water limitation.

b. See Note 4 on reverse.

c. See Note 6 on reverse.

d. See Note 10a on reverse.

e. At this sample's salinity level, this pH value indicates a possible sodium problem. Further tests are needed.

N recommendation is only a general one. Rangeland reclamation would require only 1/2 that much, and ~~maybe less~~. May want to reduce P rate also.

You may need to modify these recommendations in order to achieve maximum economic return under your specific conditions of weather, finances and management.

K. Topp

1. There is no indication that N fertilizer will increase yield or quality of alfalfa. If grain is to be seeded with new alfalfa, do not apply more than 50 lbs N/acre.

2. **Pasture and Meadows** Split N applications help to maintain yield and protein content throughout the season. Half of the year's application can be done in the fall if it is watered in immediately or injected directly into the sod (early spring application is also effective). The second half can be broadcast after the first cutting in the spring just before irrigating. Do not apply more than 75 lbs. of N at one time. See also Note 4 below.

Mixed legume-grass pastures containing more than 1/3 legume may not benefit from added N.

3. A valid N test requires sampling at least 0-1 and 1-2 feet, and quick drying of the sample (see sampling instructions). If your sample did not meet these requirements, the nitrate-N value reported was not used in our recommendations unless it was unusually high. You may multiply ppm N by 4 to estimate pounds of N in 1 acre-foot of soil as tested.

4. Fertilizer N can be lost through leaching under conditions of excess irrigation or rainfall. Its management is therefore of special importance. In cases of high N rates, sandy soils, or long-season crops, split applications will increase plant use of the fertilizer N, avoid late season deficiency, and reduce leaching losses. For annual crops, split applications of N also offer the opportunity to adjust the rate during the season according to the yield prospect.

Fall application of N is feasible on medium to heavy soils in areas of low to moderate rainfall.

5. **Potatoes** For potatoes, apply 1/3 of N preplant, the rest during the growing season. Follow petiole N. Avoid high N late in the season. See also Note 4 above.

6. **Phosphorus (P) and Potassium (K)** Plowdown or band applications are preferred for all new seedlings. For established perennial crops such as alfalfa and pasture, broadcast recommended fertilizer at earliest possible date.

Subsoil P and K levels can affect crop responses to fertilizer P or K.

7. Your soil sample is low or marginal in available potassium (K). the amount of K supplied by the irrigation water can thus be important. Mountain streams near their sources, and some city water supplies and wells are low in K. Several major Utah irrigation waters carry enough K to supply crop needs.

8. **Dryland Production** Response to fertilizer on drylands is highly dependent on available moisture. Fall applications are usually most effective.

Phosphate must be incorporated into the soil by tillage or drilled with the seed.

Nitrogen applied broadcast prior to planting

should be incorporated by tillage as soon as possible.

Spring applications of nitrogen can be made on unfrozen soil in March or early April, when the probability of rain is highest.

In years of exceptionally good soil moisture, apply the highest amount of N within the range given. In average years, amounts toward the middle of the range are preferred. If winter precipitation has been unusually high, additional N should be applied in the spring.

9. **Micronutrients** Utah soils are generally well supplied with micronutrients. "Shotgun" applications of mixtures containing boron, manganese, iron and copper "for insurance" have not been shown to be effective and are not suggested.

Zinc deficiencies have been identified in sensitive crops in some areas. Excessive phosphorus may induce zinc deficiency.

If soil zinc is Very Low, apply 10 lbs. of zinc per acre; if Low, apply 5 lbs per acre, all preplant.

In-season zinc deficiency may be corrected by spraying the crop with zinc sulfate solution. Consult qualified dealers for details of application methods and rates.

Occurrence of **iron** deficiency is primarily related to crop variety (root stock for orchards and vines). **Soil tests for predicting iron availability have not yet proved to be reliable.**

Iron deficiencies occur most often in wet soils high in lime. Excessive P or overwatering may aggravate the problem. Heavy applications of manure can cause iron deficiency in sensitive plants.

Soil application of inorganic iron compounds such as iron sulfate is not effective in Utah soils. Iron chelates vary in effectiveness, Fe EDDHA or Fe 138 being the best tested so far. Plant deficiencies may be corrected by spraying foliage with iron sulfate solution, repeating as necessary if symptoms persist. Consult specialists for details of methods and rates.

- 10a. This sample shows a slight to moderate accumulation of salt, sufficient to affect growth of sensitive crops. If subsoil drainage is adequate, applying an excess of good quality water can reduce salts to an acceptable level. If pH is also HIGH, special treatment may be needed to reduce sodium.

- 10b. This sample shows a high accumulation of salt, toxic to many crops. It is also high in sodium and will require special treatment before fertilizers are applied. Seek qualified assistance.

11. The standard soil sample depth is from surface down to 12 inches (see instructions on back of Sample Description sheet) If your sample depth was much different from this, test results may be misleading.

USU Policy It is the policy of the USU Soil Testing Laboratory to recommend only those nutrients that offer a reasonable possibility of increasing the economic return for your crops, and in those amounts that should be necessary to achieve your yield capability. Ranges of nutrients are given, to permit farm operator judgment.